

CLAIMS

1) A sterilizing unit for sterilizing a web (2) of packaging material on a machine (1) for packaging pourable food products, the sterilizing unit (3) comprising:

a bath (7) containing a sterilizing agent, in which said web (2) is fed continuously;

an aseptic environment (30) comprising a process chamber (8) connected to an outlet (12) of said bath (7) and housing drying means (17) for removing residual sterilizing agent from said web (2); and an aseptic chamber (25) communicating with said process chamber (8) via an opening (27) for the passage of said web (2), and in which said web (2) is folded and sealed longitudinally to form a tube (29) which is filled continuously with the product for packaging; and

an air processing circuit (24) for controlling the process conditions in said aseptic environment (30), and comprising suction means (40) for drawing air from said process chamber (8), air processing means (41), and means (42, 47, 49) for feeding processed air into said aseptic chamber;

characterized by comprising valve means (54, 55) interposed between said process chamber (8) and said suction means (40) of said air processing circuit (24), and which can be activated during operation of said machine (1) to control the pressure conditions in said

aseptic environment (30).

2) A sterilizing unit as claimed in Claim 1, characterized by comprising a transition chamber (6) communicating with an inlet (11) of the bath (7) and with
5 said suction means (40); said valve means (54, 55) being interposed between said process chamber (8) and said transition chamber (6).

3) A sterilizing unit as claimed in Claim 2, characterized in that said valve means (54, 55) comprise
10 an orifice (54) connecting said process chamber (8) to said transition chamber (6); and a movable shutter (55) for adjusting the opening of said orifice (54).

4) A sterilizing unit as claimed in Claim 3, characterized in that the shutter (55) is movable between
15 an open position wherein said process chamber (8) communicates directly with said transition chamber (6) via said orifice (54), and a closed position wherein said process chamber (8) communicates with said transition chamber (6) via said bath (7) when containing no
20 sterilizing agent.

5) A sterilizing unit as claimed in Claim 4, characterized by comprising sensor means (PS1) for detecting the pressure in said aseptic environment (30); and adjusting means for adjusting said open position to
25 maintain, in said aseptic environment (30), a pressure value at least equal to a predetermined threshold value.

6) A sterilizing unit as claimed in any one of the foregoing Claims, characterized by comprising barrier

means (60) for producing a localized pressure drop between said aseptic chamber (25) and said process chamber (8); said barrier means (60) defining said opening (27), through which said web (2) is fed, between
5 said process chamber (8) and said aseptic chamber (25).

7) A sterilizing unit as claimed in Claim 6, for processing a web (2) of packaging material fitted with opening devices (5) projecting from one face of said web (2); characterized in that said opening (27) is
10 asymmetrical with respect to the traveling plane of said web (2), and is higher on the side facing the face of said web (2) from which said opening devices (5) project.

8) A sterilizing unit as claimed in Claim 7, characterized by comprising a guide roller (31) located
15 immediately downstream from said opening (27); said barrier means comprising a partition (60) defining said opening (27) and shaped to get close to said roller (31).

9) A sterilizing unit as claimed in any one of the foregoing Claims, characterized in that said drying means
20 (17) comprise at least one nozzle (22) for directing a jet of air on to said web (2); said means for feeding processed air into said aseptic environment (30) comprising a first conduit (49) for feeding air to an air inlet (48) in said aseptic chamber (25), a second conduit
25 (47) for feeding air to said nozzle (22), and a distributor (46) having an inlet connected to said air processing means (41), and two outlets (46a, 46b) connected respectively to said second conduit (47) and to

said first conduit (49).

10) A sterilizing unit as claimed in Claim 9, characterized by comprising a heater (52) housed in said second conduit (47).

5 11) A sterilizing unit as claimed in any one of Claims 2 to 10, characterized by comprising an orifice (53) connecting said transition chamber (6) to the outside environment; said orifice (53) being normally closed, but being opened under low pressure.